concentration of the gallium nitride group compound semiconductor increases substantially proportionally with said mixing ratio so as to obtain a desired carrier concentration of said gallium nitride group compound semiconductor; and

forming said gallium nitride group compound semiconductor by feeding said silicon-containing gas and said at least one other raw material gas at said mixing ratio.

cont c1

21. (Amended) A method for producing a gallium nitride group compound semiconductor according to claim 19, wherein said gallium nitride group compound semiconductor comprises $Al_xGa_{1-x}N$ ($0 \leq x \leq 1$).

22. (Amended) A method for producing a gallium nitride group compound semiconductor according to claim 20, wherein said gallium nitride group compound semiconductor comprises $Al_xGa_{1-x}N$ ($0 \leq x \leq 1$).

23. (Amended) A method for producing a gallium nitride group compound semiconductor according to claim 19, wherein said gallium nitride group compound semiconductor comprises GaN.

24. (Amended) A method for producing a gallium nitride group compound semiconductor according to claim 20, wherein said gallium nitride group compound semiconductor comprises GaN.

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c2

119. (Amended) A method for producing a gallium nitride group compound semiconductor according to claim 20, wherein said carrier concentration ranges from 1 x $10^{17}/cm^3$ to 1 x $10^{19}/cm^3$.

120. (Amended) A method for producing a gallium nitride group compound semiconductor according to claim 22, wherein said carrier concentration ranges from 1 x $10^{17}/cm^3$ to 1 x $10^{19}/cm^3$.

cont
a2

121. (Amended) A method for producing a gallium nitride group compound semiconductor according to claim 24, wherein said carrier concentration ranges from 1 x $10^{17}/cm^3$ to 1 x $10^{19}/cm^3$.